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ABSTRACT

Acknowledging the importance of communications in economic development, this paper discusses the rationale behind the decision of the Andean Pact nations of Bolivia, Colombia, Ecuador, Peru, and Venezuela to develop a regional satellite communication system to be known as CONDOR. The application of contextual theorizing to the decision-making process is illustrated through a reconstruction of the environment in which the decisions took place, and factors that influenced the process are identified. It is noted that the sources of data used included primary documents from the Andean Pact countries, minutes of board meetings on the project, minutes of Andean Pact ministers of communication meetings, interviews with senior government officials of the Colombian ministry of communications, and feasibility studies commissioned by the Pact nations. Discussions of the major factors that influenced the decision-making process consider the geographical situation of the five countries, national sovereignty, and geopolitics, i.e., the desire to be independent of extraregional communications organizations. (11 references) (EW)

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CONTEXTUAL ANALYSIS OF THE DECISION TO ADOPT A REGIONAL SATELLITE SYSTEM: THE CASE OF THE ANDEAN CONDOR

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The U.S. and the U.S.S.R. with only fifteen percent of the world's population, together use 50% of the geostationary orbit. The Third World uses less than 10%.[1] The Andean pact countries of Bolivia, Colombia, Ecuador, Peru, and Venezuela which cover an area equivalent to one-half of the European continent are working together on sharing a single satellite system, their first. The plan is called CONDOR, after the bird of the high Andes.

Many U.S. spokespersons and writers consider satellite adoption decision, such as the Andean Pact as "technically inefficient" and "irrational" crowding of the orbital spectrum.[2] The end effect is perceived as apparently clear and negative --- increased conflict over rights to as yet unused orbital space and hence politicization of space. No attention is paid to which countries contribute to the satellite crowd in space, namely, the U.S. and the U.S.S.R., and their politicization of earth's, and now space's resources, due to their attempts to sustain and extend their dominance.

But this paper does not deal with our perceptions of the superpowers. It deals with the Andean Pact's reasons for adopting a regional satellite

communication system. Major factors that influenced the decision include: the Andean mountains themselves, the Amazon jungle with few communication links that presently permit little national security or control over one-third to one-half of each country, the need to exercise sovereignty over the geostationary orbit felt by countries on the equator, politics related to geographical locations, and a history of attempts at regional unity and self reliance against outsiders, beginning with Simon Bolivar.

The sources of data for this paper include primary documents from the Andean Pact countries, minutes of board meetings on the project, minutes of Andean Pact ministers of communication meetings, interviews with senior government officials in the Ministry of Communication in Colombia, and copies of feasibility studies that have been commissioned by the Andean Pact. Since the project is in its planning stages, this paper is necessarily preliminary and partial.

THE IMPORTANCE OF CONTEXT

The general purpose of this paper is to illustrate the application of contextual theorizing to enrich understanding of the reasons why third world

countries make the communication decisions they do. The central role of geopolitics and sovereignty in decision making on communication is frequently ignored in our studies. These variables are frequently treated as extra-communication variables outside the purview of communication researchers. They are perceived as temporary irrational deviants, distinct from how first world countries make decision. Reasons for this neglect of context or setting include our use of normative ideal "rational" efficiency criteria for the analysis of communication decisions. The introduction of communication technology in First World and Third World settings frequently has more to do with political and cultural contextual forces and less to do with technical efficiency or cost effectiveness than our research and policies acknowledge.

Contextual analysis tells us which forces in the environment influenced a particular decision. The contextual framework has been used to reconstruct how India decided that its future communication system would be satellite based.[3] We also plan to use this contextual framework for comparative analysis of the satellite decision making process in other adopting countries such as Indonesia and Brazil. We have finished a similar paper on the decision made by Mexico to

have its own domestic satellite system entitled Morelos.[4]

THE CASE OF CONDOR

The Andean Pact consists of Bolivia, Colombia, Ecuador, Peru and Venezuela. The Pact was created in 1969. In the early 1970's, the Andres Bello Covenant, the educational, cultural and scientific branch of the Andean Pact, carried out feasibility studies for an educational satellite system for the region. After three years of debate, the proposal called "The Latin American Regional Education System" (SERLA) was indefinitely suspended in 1973. There were differences about the political and educational implications of the project. ASETA (the Association of State Telecommunication Enterprises of the Andean Sub-Regional Agreement) was created in 1974 by the Andean ministers of communication. The purpose of ASETA was to develop domestic and regional communication services such as telephony, telegraph, telex, television and data communication. Thus, soon after its creation, ASETA began to discuss the feasibility of a satellite for this region. The possibility of using the domestic satellite system that Colombia was planning, was one option. In 1977, Colombia announced that it would abandon its single-country project if a sub-regional project proved to be feasible and won the support of other Andean

governments. At this stage, Venezuela was commissioned by ASETA to conduct a preliminary study for a regional system. Soon after, ASETA requested a feasibility study that was conducted and financed by the Canadian Astronautics Limited and SaTEL of Ottawa. They focused on technical, economic and financial alternatives to link up the Andean countries. In 1984, ASETA decided to go ahead and adopt a regional communication satellite system as a priority project. Advance publication of the CONDOR Network was filed with the IFRB as per radio registration regulations on frequency assignments. Another feasibility study was seen as essential, given that the first one was conducted several years ago. This one was conducted by the European Space Agency subsidiary, the European Satellite Consulting Organization, ESCO for short. Their report was presented in 1986. Early in 1988, OATS, the new Organization for Andean Telecommunication by Satellite was created to operate the regional system, with headquarters in Venezuela.

The Andean regional satellite is expected to be launched between 1992 and 1995. The system will consist of two geostationary satellites, each with ten years of useful life. There will be an identical third satellite in reserve on the ground. All three spacecrafts are expected to operate in the C-band

although a hybrid of C and KU band satellites is a possibility. The first satellite will be located above Colombia at 72 degrees west longitude. The second and third satellites will be located above Ecuador at 77.5 degrees west and 89 degrees west longitude.

The objectives[5] of CONDOR are the following:

1. To replace, expand and/or complement the existing telecommunication network (where appropriate and necessary in order to provide nationwide domestic telephone, telegraph, telex and data communications services (including, eventually, audio conferencing, and teleconferencing) in each Andean Pact country, with special emphasis on the rural areas.
2. To replace, expand and/or complement the existing telecommunication network in order to provide nationwide domestic radio and television services in every Andean Pact country.
3. To facilitate domestic government communications, with particular attention to the needs of the ministries of Agriculture, Health, Education and Defense.
4. To replace, expand and/or complement the existing Andean microwave

network and rented satellite capacity, in order to facilitate and promote the provision of intra-regional services such as telephone, telegraphy, telex, and data communications.

5. To replace, expand and/or complement the existing Andean microwave network and rented satellite capacity, in order to provide at least one intra-regional television channel as well as facilitate intra-regional radio links.

The satellite alternatives to meet the proceeding objectives that were considered are: one, renting capacity on BRAZILSAT: this was dismissed because BRAZILSAT only partly covers the Andean subregion. The second option was coverage by a PANAMSAT. This was considered a financial risk in the long run due to the uncertainty of PANAMSAT's commercial policies. The third alternative was to continue to rent on INTELSAT, which is what many of the Andean countries have been doing for domestic services presently. And the fourth option was to have an independent regional satellite, given present utilization of 8.5 transponders of 36 MHZ, and a 1992 projected demand of 10 transponders for the region.[6]

A decision was made to experiment with sharing INTELSAT transponders to

cover the region. The idea was to negotiate joint lease agreements regionally so that considerable savings could be achieved by ASETA members negotiating with INTELSAT collectively. INTELSAT was requested, and agreed to an ASETA proposal to test 3 TV carriers in a single 72 MHZ transponder. Conducted in September-October 1985, the experiment was successful. INTELSAT was considered a good option: it is a low financial risk, a dependable investment, and the least expensive. But the two factors that worked against the INTELSAT option were: first, the high cost of the ground segment if INTELSAT satellites were used and second, the political implications of having an international organization be primarily responsible for regional communication over a large segment of the world. The final decision in favor of a regionally owned satellite system to be called CONDOR was taken even though it would be more expensive and economically risky if the expected demand for services did not materialize leading to underutilization of CONDOR as has been the case with ARABSAT and MORELOS.

On the face of it then, a custom designed space segment that would service the ground segment optimally and guarantee political independence from an external organization, namely INTELSAT, were the two major reasons that

determined the CONDOR decision. The decision was taken on technical and political grounds. The subsequent sections of this paper will explore the factors behind this decision in greater depth.

According to present ASETA projections, CONDOR is going to cost more than one billion dollars. This breaks down into over $220 million in short and medium investments for the space segment[7, 8] and approximately $840 million in short, medium and long term expenditures on the ground segment. The ground segment is expected to consist of seven hundred and forty eight transmit and receive earth stations for telephony, telex and data communications; eight hundred and seventy eight transceivers for television services, and forty-four receive-only dishes[9]. Each of the ASETA countries will have satellite monitoring and control stations that can communicate to the central space center that will be in Caracas, Venezuela.

How is CONDOR going to be financed, given the high debt owed by each of the Andean countries? The alternatives are the following. The first is the European Economic Community, the EEC. The EEC granted ASETA $300 thousand in nonreimbursable funds to finance the feasibility study and ESA's technical assistance. It has also expressed its willingness to finance the design and

engineering of CONDOR. A second offer of financing comes from Canadian development agencies, like CIDA and the Canadian satellite agency TELESAT. A third possibility is the US government's Trade Development Program which has made an offer of $750 thousand dollars for the design and engineering phase. A fourth alternative is financial institutions in the region like Andean development Corporation (CAF) and the Inter American Development Bank, and international financial institutions like the IBRD, the International Bank for Reconstruction and Development, also called the World Bank.[10, 11]

THE ANDEAN LOGIC

The major reason that influenced the Andean Pact's decision to have its own satellite system CONDOR is geography. Geography here pertains to the Amazon jungles and the very high Andean mountain range.

The Andean subregion is a complex collection of all types of climates and terrains, e.g. high mountains and plateaus, extensive hot deserts, rainy forests, and deep unexplored jungles. Most of these geophysical features are present in each one of the five Andean Pact nations, giving them a strikingly similar topography.

In every Andean country, the Andean cordillera reaches heights over 15,400

feet. In the Andean world, with the exception of Lima, the Peruvian capital which lies in the Pacific coast, all Andean capital cities are located on the top of mountains. La Paz, Bolivia's principal city, is the world's highest capital located at approximately 12,000 feet.

Every Andean Pact country also has a large portion of its national territory dominated by the Amazon basin. No development of the region is possible without reliable telecommunications links in the Amazons, an area that has come to be known as "the East of the Andes and West of nowhere". Thus, economic development in this geographical area awaits a communication system that can handle the mountains and the jungle.

A related reason for implementing CONDOR is the problem of exclusive national sovereignty over the Amazon basin. One-third to two-thirds of each of the five Andean Pact countries are run over by the Amazon jungle. Each government has very scanty knowledge of what is happening in the jungle. Thus, to exercise full sovereignty over the Amazon territories, the Andean Pact countries find a telecommunications network like CONDOR crucial. CONDOR would help interconnect the Amazon regions into their national economies and political administrations. Thus, the geography of the Andes is not only an

impediment to the economic development but it is also an impediment to national sovereignty and national security. Hence, CONDOR represents a contribution in this political control area, too.

A third related factor is geopolitical. The fact that the Andean Pact countries are located at the entrance to South America and are close to the Panama Canal have been seen as strategic issues. The unfortunate lack of integration among the five countries in their own national development and regional development, as also their lack of control of the area make them sensitive to the geopolitical issue.

The preceding three geography-related reasons have focused on the need for a satellite. However, why a regionally owned and controlled satellite, against use of transponder capacity on INTELSAT, PANAMSAT, or BRAZILSAT? There are two factors. One reason is ASETA's support for the Colombia-Ecuador claim of sovereignty over their segment of the geostationary orbit as Equatorial countries. Many equatorial countries consider the geostationary orbit an integral part of their national sovereignty. Their feeling is that any foreign-owned satellite placed over an equatorial state's segment of the geostationary orbit should be authorized by the concerned state. Thus,

Colombia has protested the presence of several satellites in what it considers it's own geostationary space. The Andean Pact feel that they should exploit their unique equatorial location with at least one geostationary regional satellite system, if they cannot afford individual national systems.

The second major reason is wanting independence of an external agency, a strong sentiment dating back to Simon Bolivar. Simon Bolivar, the great South American liberator, led the Andean region in its 12-year fight for independence from the Spanish crown in the early 1820's. Simon Bolivar helped the region learn that its strength against colonizers (and potential colonizers) lay in regional unity and integration. Therefore, in spite of several tensions between the nations of the Andes, political compromise is frequently the final outcome. The strength of the Simon Bolivar sentiment is even recognized by commercial transnational business entities such as PANAMSAT who chose to call their first geostationary communication satellite the "Simon Bolivar". In spite of the political independence Simon Bolivar won for the region, the Andean Pact is aware that they are presently dependent on foreign actors. In spite of their mineral and natural resources, they recognize they belong to the group of the seventeen most indebted nations. Such dependency is traced in

part to the inefficient communication system in the region.

IMPLICATIONS

This paper has used a context-analytical framework to point out the logic behind the Andean Pact's selection of a regionally owned and controlled satellite communication system. We point out that accusations of technical inefficiency and irrational overcrowding are leveled against proposals from populous Third World countries with no satellites in space, by countries such as the U.S. who contribute to 25-30% of the total satellite crowd. We also present the Andean logic; it may be different from the logic the U.S. may have used in its satellite decision-makeup but it makes sense in the context of Andean history and geography.

Our analysis indicates the centrality of geography, national sovereignty and independence from extra-regional communication organizations in the Andean Pact's adoption decision-making. Presently, condor satellite specifications for international tender are under preparation simultaneously, each Andean Pact national legislature is considering the agreements that have been negotiated to date for ratification.

Will the reasons for adoption at this stage energize subsequent project

implementation and satellite utilization, or will these factors fade into insignificance? We hope to continue our research on CONDOR to pursue this further.

REFERENCES

1. "List of Geostationary Space Stations by Orbital Positions," Supplement, Telecommunication Jouran, vol. 54, December 12, 1986.

2. Martinez, Larry. Communications Satellites: Power Politics in Space. Dedham, MA: Artech House, 1985, pp. 10-12.

3. Mody, Bella. "Contextual Analysis of the Adoption of a Communication Technology: the Case of Satellites in India," Telematics and Informatics, vol. 4, no. 2, 1987.

4. Borrego, Jorge and Bella Mody. "Contextual Analysis of Adoption of a Communications Technology," Telecommunications Policy, in press.

5. Empresa Nacional de Telecomunicaciones (TELECOM), "Sistema Andino de Telecomunicaciones por Satelite: Proyecto CONDOR," Oficina Asesora para Asuntos Internacionales, Bogota, Colombia, November, 1986, p. 5.

6. ASETA, "Sistema Andino de Comunicaciones por Satelite con Capacidad INTELSAT compartida: Aspectos Tecnico-Economicos," Documento ASETA-105, XV JD, Quito, Ecuador, Octubre 1983, p. 10.

7. ASETA, "Sistema Andino de Telecomunicaciones por Satelite: Proyecto CONDOR," ASETA Informativo, vol. 1, no. 2, June 1987, pp. 1-2. (See comment #9).

8. "Colombia y Venezuela: Direccion y Sede del CONDOR," El Tiempo, March 29, 1988, p. 2-B (See comment #9).

9. ASETA, "Presentacion de Proyectos de Integraciiion en Telecomunicaciones del Area Subregional Adnina a la Comunidad Economica Europea," Documento ASETA 111, Quito, Ecuador, April, 1984, p. 27.

10. ASETA, "Acta de la XVIII Reunion de la Junta Directiva de ASETA," Cusco, Peru, June, 1985, ppl 3-6. (See comment #11).

11. ASETA, "Acta de la XIX Reunion de la Junta Directiva de ASETA," Caracas, Venezuela, 1985, p. 31-36.